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Cultural resource inventory and evaluation

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CULTURAL RESOURCE INVENTORY AND EVALUATION
THE COMMERICAL MINE

for

The Montana Department of State Lands
Helena, Montana

by

Paul Anderson

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CULTURAL RESOURCE INVENTORY AND EVALUATION

THE COMMERICAL MINE

FOR

THE MONTANA DEPARTMENT OF STATE LANDS

HELENA, MONTANA

BY

PAUL ANDERSON

CULTURAL RESOURCE DIVISION
MINERAL RESEARCH CENTER
P.O. Box 3708
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December 14, 1982

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INTRODUCTION

In September of 1982 the Mineral Research Center in Butte, Montana was contacted by the Montana Department of State Lands (DSL) and requested to perform a cultural resource inventory and evaluation of various abandoned mines throughout Montana (Figure 1).

In the interest of public safety and health the DSL plans to close all open adits, remove remaining structures and reclaim disturbed areas at the mines through removal, contouring and/or revegetation.

The following report describes the physical setting, the historic background and the present state of the sites. An evaluation as to the eligibility of the sites to the National Register of Historic Places and a summary of projected impact on the sites is given.

All field notes, photographs and supportive information resulting from the cultural resource fieldwork will be maintained at the Mineral Research Center.

Field investigations were conducted on November 12, 1982. The Principal Investigator and Project Director is Paul Anderson. Connie Moore was the field assistant.

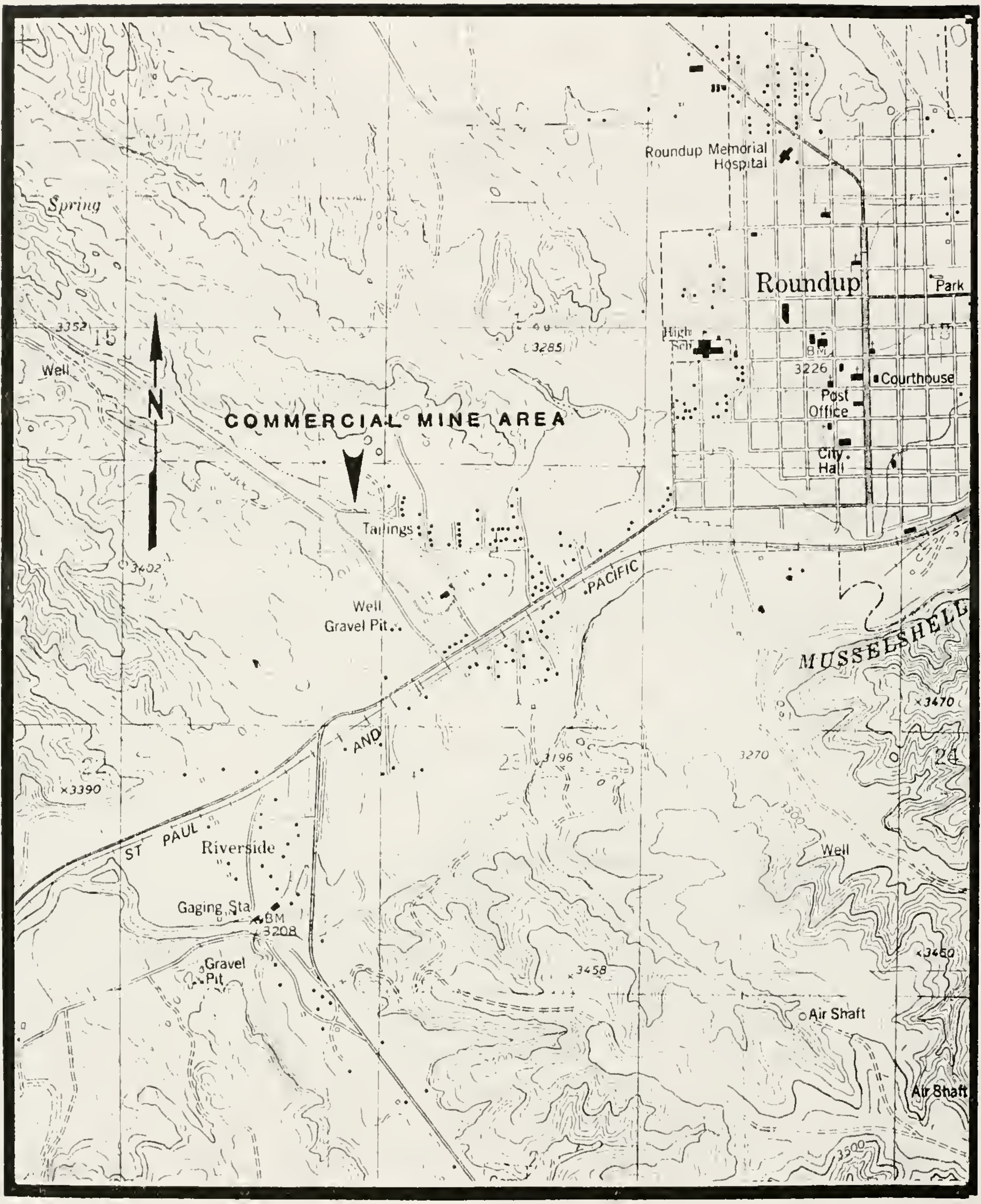

Figure 1. Map showing location of project area. (USGS Quadrangle Roundup, Mont. N4622.5-W10830/7.5 - 1979, 1:24,000).

LEGAL DESCRIPTION OF THE COMMERCIAL MINE

N1/2 NW1/4 Section 23 and SW1/4 SW1/4 SW1/4 Section 14, T8N R25E

METHODOLOGY

The project area was carefully examined by the project team and the site was recorded, mapped and photographed. Undisturbed areas were systematically examined for possible prehistoric activities. Due to the disturbed nature of the areas it would seem likely that had there been any prehistoric evidence it would have long since been buried or destroyed.

The state site files at the University of Montana; the Montana Historical Society's Historic Preservation Office files; and the Montana Fish and Game Commission's Historic Sites Compendium were searched for previously recorded sites in the area. No prehistoric sites were in the immediate vicinity of the DSL project mines. Historic sites in the area consist of other abandoned coal mines and will not be impacted by the current DSL mine reclamation project.

Documentary evidence on many of the mines is sketchy at best. Most of the modern records of the mine safety inspection office were destroyed some time ago and there is very little in the way of records for specific mines during the boom period from 1890 to 1930. Personal interviews were conducted with several of the residents in the area who worked in the mines. Dates and names gained from these interviews should be considered tentative - understandable given the number of years that have elapsed since the mines were in operation.

GENERAL FEATURES AND PHYSIOGRAPHY OF THE PROJECT AREA

The Bull Mountains are an "island" of trees and rugged topography within the Northern Plains grassland province. The area consists of ponderosa pine covered ridges and buttes bounded on the north by the Mussellshell River and on the east, south and west by rolling prairie. The sandstone ridges of the Bull Mountains are composed of Tongue River sandstone and are separated by elongated, relatively narrow valleys, some of which contain intermittent streams. The alluvial sediments on the valley floors consist of sand derived from the decomposition of the sandstone formations on the ridges. The physical change from the valley ecosystem to the pine ridge/sandstone ecosystem is abrupt, generally characterized by the exposed sandstone escarpment of the ridge edges.

Numerous springs occur throughout this ridge-valley topography and provide excellent water. Mule deer and whitetail deer are the principal large ungulate species found in the area today. Bison would have provided a major resource for food, clothing and tools in the past. Game birds include wild turkey, grouse and pheasant.

The Bull Mountains are not very imposing when compared with their neighbors, the Crazy, Little Belt, Judith, and Big Snowy Mountains. The maximum elevation is about 4,700 feet and the maximum relief in the field is about 1,800 feet.

Climate

The climate of the Bull Mountains is a semiarid region typical of large portions of the Great Plains. There is little rain during the summer and most of the precipitation falls during the spring and autumn with moderate amounts of snow during the winter. Temperatures range from extremes of bitterly cold winters to hot, dry summers. The precipitation is slightly higher over the Bull Mountains than on the surrounding lowlands which result in a fairly dense vegetation growth in the hill country (Woolsey et al. 1917).

Vegetation

Vegetation types in the Bull Mountains and surrounding area fall within the Northern Grassland zone. Species include bunchgrass, buffalo grass, sagebrush and cactus. The hill country is covered with a dense growth of pine trees while cottonwood trees are found along the Musselshell River and scattered along the principal creeks in the area. Much of the area in the mountains is used for stock grazing while a large percentage of the surrounding lowlands are under cultivation.

Geology

The general geology of the Bull Mountain coal field is described by Woolsey, Richards and Lupton as follows:

> The important coal-bearing information of the Bull Mountains is the Fort Union, which belongs to the lower part (Eocene series) of the Tertiary system. The rocks of this formation consist principally of massive, buff to yellowish-gray sandstone and light-colored clay shale. The lower 200 t0 300 feet of the

formation contains little coal and is dark in color, olive-green, drab, and gray sandy shale predominating. In some of the more sandy beds andesitic tufaceous material has been found, and the beds have been correlated with the Lebo shale member of the Fort Union, whose type area is northeast of the Crazy Mountains. Below the Lebo shale lies a series of yellowish and darker colored sandstone and shale belonging to the Tertiary system. These rocks, which are nearly barren of fossils, rest in turn with apparent conformity on the marine Bearpaw shale of the Upper Cretaceous, the lowest formation exposed in the region. The flood plain deposits of Musselshell River and its tributaries and certain high-level river or terrace gravels belong to the Quaternary period (Woolsey et al. 1917).

HISTORIC BACKGROUND

The existence of coal in the Bull Mountains was probably known to local ranchers and homesteaders during the latter half of the 19th century and small amounts may have been dug from the surface outcrops for domestic use. The first serious study of the field was made by Waldemar Lindgren and George H. Eldridge in 1881 for the Transcontinental Survey (Leonard et al. 1907). The results of their studies were published in the Report of the Tenth Census in 1886. The section on the Bull Mountains described the rocks and stratigraphy of the mountains and generally described the nature, extent and physical appearance of the coal beds. In 1889 G. C. Swallow briefly described the coal field in the Montana State Mine Inspector's Report. He mentioned that the coal was high in sulphur and would not be very useful except as a domestic fuel. He estimated the Bull Mountains would yield approximately 800 million tons of coal (Swallow 1889). However, as it turned out, the coal would be widely used and the total reserves would amount to some 9.5 billion tons (Chadwick 1973).

Being unaware of Swallow's dour evaluation, the Northern Pacific Railroad Company in 1880 developed a small mine in section 23, T6N R27E. However, the long distance to the railroad made it unprofitable to continue the operation. Later a car load of coal was reported to have been taken from the mine and shipped to Anaconda but no further attempt was made for the next two decades to continue mining coal in the Bull Mountains (Woolsey et al. 1917).

Extensive development of the Bull Mountain coal field first got underway when the Chicago, Milwaukee, and St. Paul Railway built its Pacific Coast extension through Montana in 1908. The Bull Mountain field was ideally situated to provide coal for the railroad since it was the only significant coal deposit along the right-of-way between Iowa and central Washington. Even before the railroad arrived from the east, the first coal mine was begun by the Republic Coal Company in anticipation of the railroad's need for coal. The mine - named the Republic No. 1 - was located south of the town of Roundup and was opened in 1907. The company attempted to work the Roundup coal bed by means of a slope which extended under the river but they encountered severe flooding problems and had to abandon the mine. The company then attempted to develop the coal bed by enlarging an air shaft on the south side of the Musselshell River which had been intended for the first mine. The shaft was driven to a depth of 137 feet where a six foot wide bed of clean coal was encountered. The coal was mined by the room and pillar methods and operated until 1912 (Woosley et al. 1917; Chadwick 1973).

During this same period the Republic Coal Company opened their No. 2 mine on the Roundup coal bed near the center of section 36, T8N R25E. The mine operated from a 347 foot shaft and during its first year produced 84,082 tons of coal. By 1917 the mine was producing from 300,000 to 400,000 tons annually. The Republic No. 2 was destined to become the largest producer in the Bull Mountain field and one of the longest lived mines in the area, finally closing in 1956. The town of Klein grew up around the mine and by 1917 had some 1,500 inhabitants. Roundup also grew to a similar size during this period-changing from a sleepy cow town to a booming coal camp (Woosley et al. 1917; Chadwick 1973; Travis and Turnbull 1950; Musselshell Valley Historical Museum 1974).

The Republic Coal Company also acquired the Davis mine, two miles east of Roundup and the combined production of the two properties exceeded 800,000 tons and employed 600 men. The Republic Coal Company sold almost all of its coal to the railroad for locomotive fuel but the arrival of the railroad also meant that coal could be economically sold to distant markets. Numerous other mines were opened during this period to meet the increasing demand for coal throughout the area--including the Keene, Prescott, Jeffries, Carpenter Creek, Gunther, Divide and Gildroy (Morgan 1966).

The largest and one of the most consistent producing mines which sold coal to outside markets was the Roundup Coal Mining Company mine No. 3 (or "Mine A") and also called the Commercial Mine located about a mile west of Roundup. The mine was first opened in 1908 to develop the Roundup bed using the room and pillar methods of mining. The coal was brought to the surface by a hoist up a slope. Annual production ranged from 200,000 to 400,000 tons. In 1947 the company sold 25,000 tons to sugar refineries in western Montana; about 40,000 tons went to the slag-treating plant of the East Helena smelter while the remaining 135,000 tons was sold in Montana, North Dakota and South Dakota for domestic heating use. The mine continued to be a major producer until it finally closed for good in 1963, leaving only six small mines still in operation and most of these would close down by the 1970s or operate on a very limited basis (Woosley et al. 1917; Chadwick 1973; Travis and Turnbull 1950).

The Bull Mountain field has been one of Montana's largest and most consistent producing coal districts. Like other districts it began to decline after the 1920s although the drop was more gradual than in other coal mining areas. The Roundup district retained second place to the Colstrip district while the town of Roundup maintained a population between 2,000 and 3,000 since 1920. The town of Klein, however, all but disappeared after the closing of Klein Mine in November 1956. There was a brief revival of coal use during World War Two with production running over a million tons annually. Production declined rapidly after the war as the railroads converted to diesel and home users of coal switched to natural gas or fuel oil. However, the Bull Mountains remain as one of Montana's largest coal reserves and the potential exists for the area to once again become a major coal producer if economic conditions and energy needs warrant it.

SITE DESCRIPTION

Site Identification: 24ML165 - The Commercial Mine

Location: N1/2 NW1/4 Section 23 and SW1/4 SW1/4 SW1/4 Section 14, T8N R25E

Area: 67,375 m^2

Elevation: 981 m

Description: The Commercial Mine is located about a mile southwest of the town of Roundup immediately north of U. S. Highway 12 (Figures 1 and 2). All that remains that would identify the site as a mining operation are mine tailings located just east of the county road which heads northwest from the highway. Most of the area is disturbed with only a thin cover of range grasses over the tailings piles. Much of the mine site is currently used by a lumber yard operation. The nearest water is a small intermittent creek which runs through the site. The Musselshell River is a half mile south and the slope from the mine entrance originally ran under the river to the coal bed over three miles to the southeast.

Structures and Cultural Materials: Almost nothing remains of this mine which was once one of the largest coal producers in the Roundup area. The tailings on the north side of the site are the most obvious remains. Two structures from the mine operation are located to the south of the tailings (Figures 2 and 3). The two structures measure 8 x 22 m and are constructed of cut lumber and tin siding resting on concrete block foundations. The original use for the buildings is unknown although they most likely were used for maintenance or storage. The structures are currently used as warehouses. Nothing remains of the original tipple (Figure 4) which was torn down in 1927 nor of the replacement tipple which burned down around 1957. No trace of the original mine portal remains on the site area (Lynch 1982).

Historical Development: The Roundup Coal Mining Company opened its No. 3 (or "Mine A" or "Commercial Mine") in September 1908 and the mine remained in almost continuous operation until its final closing in 1963. The mine was one of the Roundup district's major producers throughout its period of operation. A year after the mine opened it produced 193,530 tons of coal. For more than fifty years the mine would continue to produce from 200,000 to 400,000 tons annually on a fairly consistent basis.

The main opening of the mine was a 25 percent slope 1,600 feet long. Ventilation was provided through a vertical shaft 466 feet deep with air blown by a 5-foot fan driven by a 75-horsepower electric motor which delivered 90,000 cubic feet per minute to the workings. The room-and-pillar system was followed in working the coal bed which was about 50 inches thick. The mined coal was loaded into mine cars by crawler-mounted, mobile loading machines. The cars were hauled about three miles from the working faces

COMMERCIAL MINE

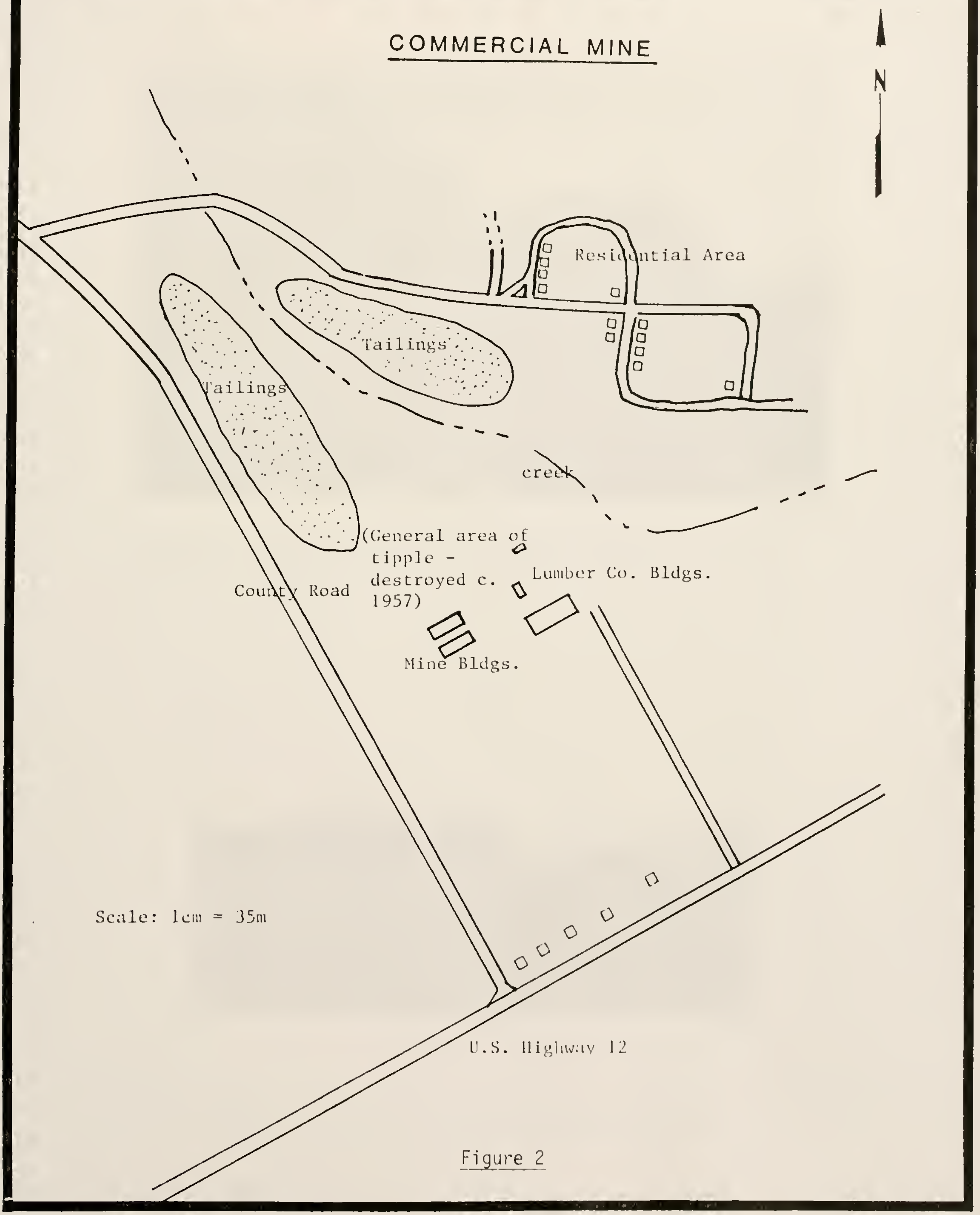

Figure 2

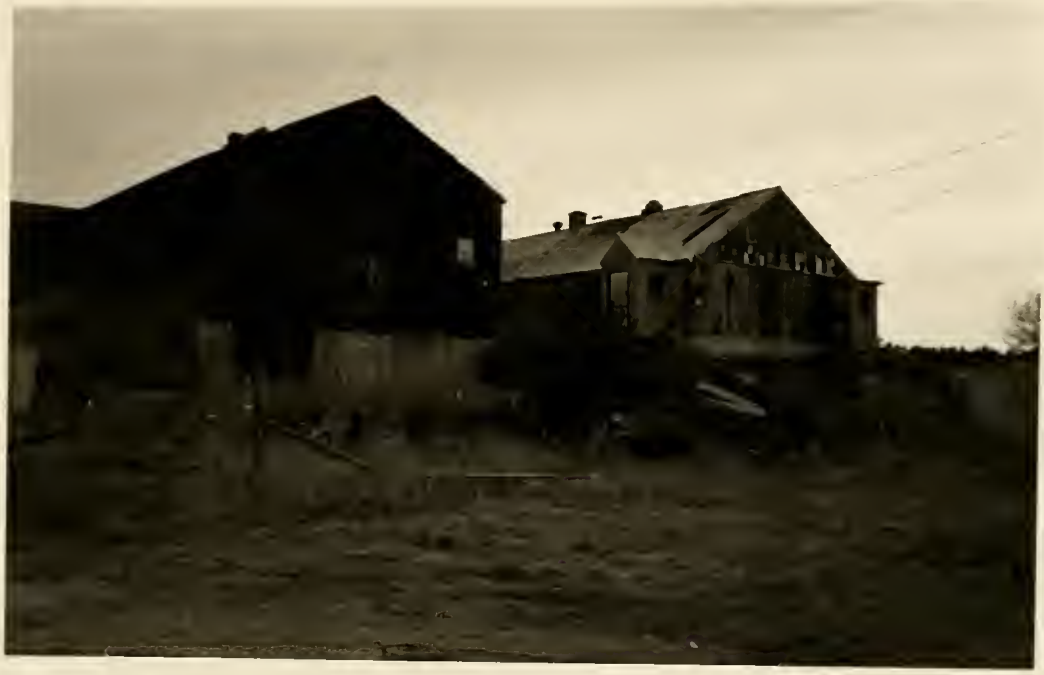

Figure 3. Two remaining mine structures (looking northwest).

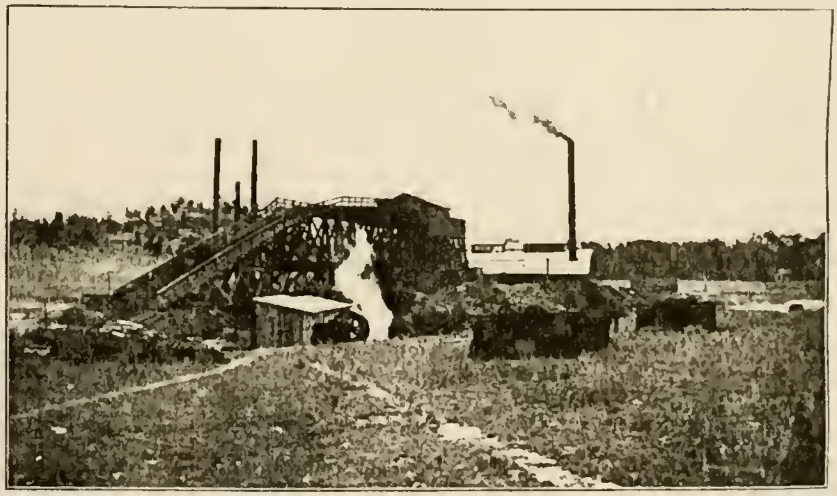

Figure 4. Photo of original tipple circa 1917.

to the bottom of the slope by a 36-ton trolley locomotive. Ten cars at a time were then pulled up the single-track slope to the tipple by a 400-horsepower electric hoist. The coal was screened and loaded into railroad cars which were moved from the tipple over four tracks of the Chicago, Milwaukee, St. Paul and Pacific Railroad.

The mine was kept dry by two permanent pumping stations in the mine which pumped about 12,000 gallons of water a day. The mine employed an average of 220 men with 150 working underground and 70 on the surface. Coal produced at the mine was sold to sugar refineries in Montana, the smelter in East Helena and to domestic users in North Dakota, South Dakota and Montana (Travis and Turnbull 1950).

Evaluation: Amost nothing remains at this location which would even identify it as a mining site. The two remaining structures are in a dilapidated condition and have no architectural or technological significance. Most of the mine site is currently used as a lumber yard operation which has obliterated any material remains from the mining period. It is unlikely that further work on the site would reveal additional information on mining history and technology during this period.

National Register Statement: The site lacks integrity due to the destruction or removal of almost all the material remains from the original mining operation on the site. The site does not meet the eligibility requirements for listing on the National Register of Historic Places.

Management Recommendations: The Department of State Lands considers the tailings on the site to be a safety and health hazard and plans to reclaim or remove them. This plan would not have a detrimental effect on the site since it is not eligible for listing on the National Register of Historic Places. The site has been recorded, mapped and photographed and no further work is recommended.

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APPENDIX A:

Site Forms

SITE FORM NO. 1

Montana Tech Alumni Foundation
MINERAL RESEARCH CENTER
Post Office Box 3708 • Butte, Montana 59701

Cultural Resource Inventory

1. Site Number 24ML165

2. County Musselshell

3. State Montana

4. Site Name Commercial Mine

5. Other Names For Site Roundup Coal Mining Company #3 Mine (or "mine A")

6. City or Town Roundup   Vicinity of X

7. Map Reference
USGS Roundup, Mont.
N4622.5-W10830/7.5
1979

8. Township & Range Number T8N R25E

9. Section Number
N½ NW¼ Sec. 23 and
SW¼ SW¼ SW¼ Sect 14

10. Latitude 46° 26 25

11. Longitude 108" 33' 50

12. U T M Reference

	Zone	Easting	Northing
		686750	5145450
	12	687500	5145800

Surface Ownership
15. Federal   State   Private X

16. Mineral Ownership
Federal   State   Private X
All Minerals
Coal Only

17. Project Name
Department of State Lands
Abandoned Mines Reclamation

18. National Register
On
Nominated
Determined Eligible
Recommended
Need Data
Not Eligible X

19. Site located by & Date
P. Anderson
11/13/82

20. This Record by & Date
P. Anderson
12/1/82

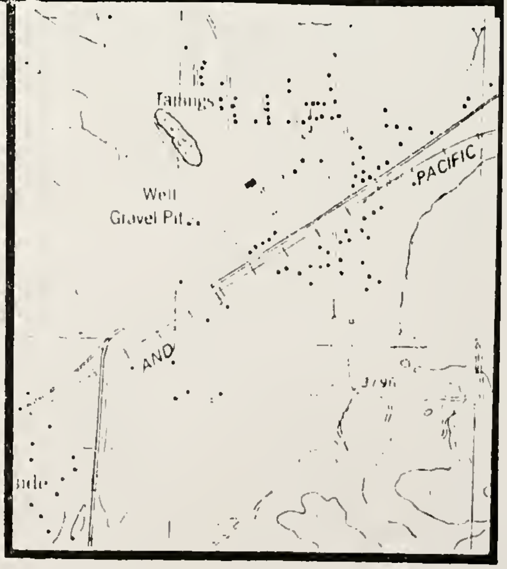
21. Revisions by & Date

22. Site Category
Historic X
Prehistoric
Other specify

23. Site Status
Survey X
Photo/map X
Tested
Excavated
Other specify
Comment.

13. Publications
USGS Bulletin 647 The Bull Mountain Coal Field, E. Russell Lloyd, 1917.
U.S. Bureau of Mines Report of Investigations 4684, April 1950.

14. Narrative of site location and access to site
The site area is located on the east side of the county road which runs northwest from U.S. Hywy 12 one mile southwest of Roundup. The site area runs from about 2000 m north of the highway to the tailings area about 7000 m from the highway.



SITE FORM NO. 2

SETTING AND CONDITION OF SITE

Site Name Commercial Mine

Phytogeography

1. Elevation
981 Meters 3220 Feet

2. Distance, direction and nature of nearest water source
The Musselshell River is located ½ mile south of the site.

3 Soil (color, character, depth)

5 General vegetative community
Pine breaks and rangeland

6 On site vegetation
sparse cover of range grasses

4. Geographic land form/ topography character/ slope / site faces:
Pine breaks, sandstone outcrops and rangeland

Site condition

7. Natural deterioration

Degree	Type
none	sheetwash
light	gully
moderate	wind erosion
heavy	animal disturb
complete	natural weathering

8 Human Disturbance (real/potential)

Degree	Type	Distance From
light	buildings	
moderate	towers	
complete X	roads	
unknown		

Comments Most of the original mine structures have been removed and the DSL plans to reclaim the tailings.

9. Environmental/Economic threats to site

Private development	Public works project
Zoning	Mining
Vandalism, deterioration	X Other (specify)

Comments The Department of State Lands plans to remove or reclaim the tailings piles. Nothing else in the site area will be affected.

Site Name: Commercial Mine

HOMESTEAD/RANCH/FARM GENERAL FORM No.

1. General Description: (no. of buildings, general use, etc.)

- two tin-sided buildings measuring 8 x 22 m probably used originally as shops or maintenance

- The original tipple for the mine was built in 1908 and was torn down in 1927. A replacement tipple was constructed at the same location but burned down around 1957. No trace of the tipple remains on the site. It was located in the area to the north of the two remaining mine buildings.

Key to site sketch map and individual feature/building forms.

2. Historic Ownership:

(1) Roundup Coal Mining Co.

(2)

(3)

3. Date of construction:

unknown

4. Use (present, original):

Storage and a welding shop - originall may have been for maintenance

5. Names Associated with Title:

Name (last name first)	Dates(s)	Deed Book Ref.

6. Track Book Reference:

Name	Type of Entry HE, CE, DLE, other	Serial No.	Patent No.	Representation on GLO Plat

10. Noted events associated with property or with persons associated with property:

The Commercial Mine operated from Sept. 1908 to 1962 and was one of the major coal mines in the Roundup area.

CULTURAL RESOURCE FORM NO. 6

Site Name Commercial Mine

1. Photos:

Accession	Description	Direction
1. Proof #1 - photos 1-16		
2.		
3.		
4.		

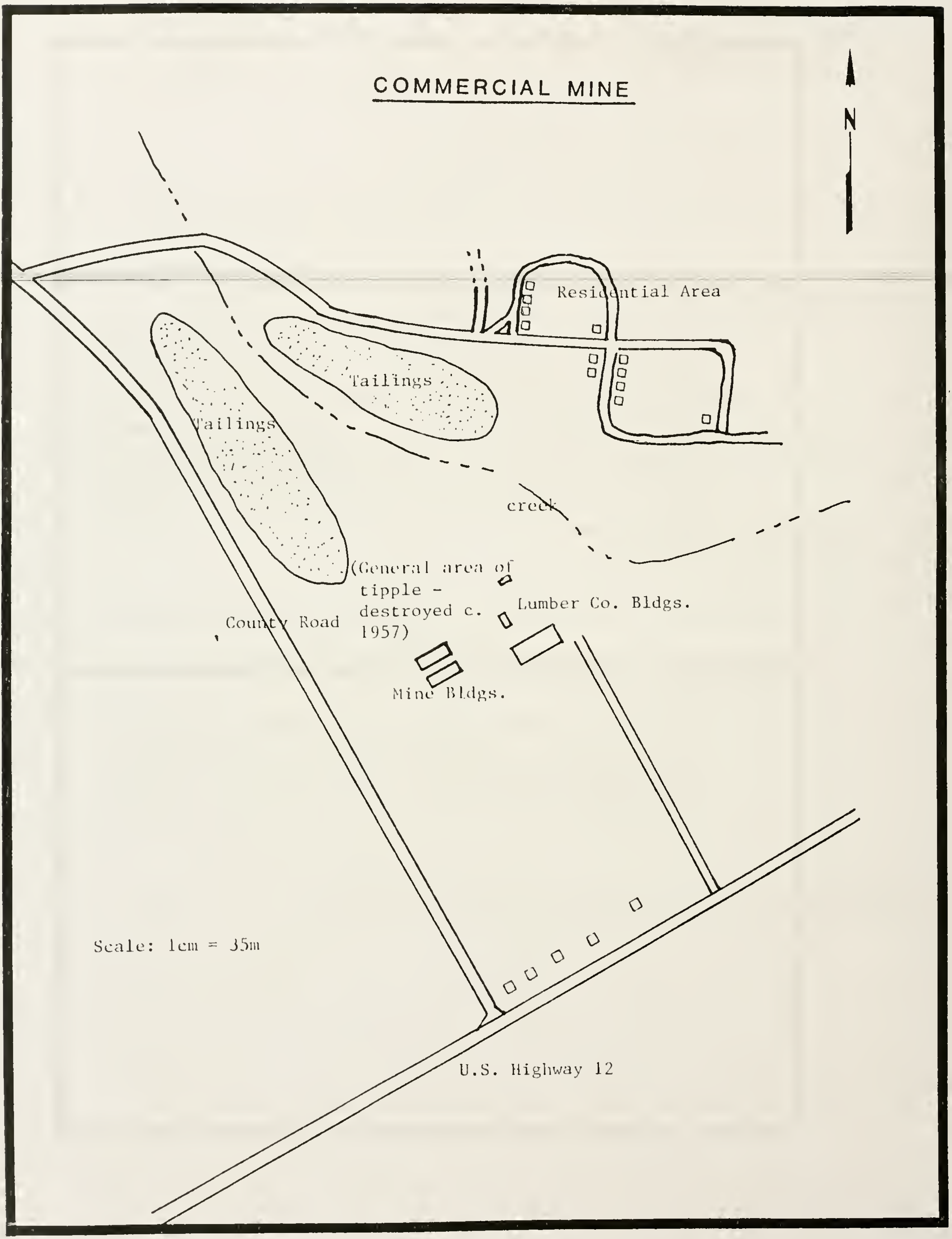
2. National Register Statement:

Most of the mine related structures have been either removed or dismantled. Nothing remains of the tipple or the mine portal. Two structures from the original mine operation and coal slack piles are all that survive from this once extensive operation. The two structures are currently used for storage and are in a poor state of repair. Much of the original mine area is now occupied by a lumber mill operation. The integrity of the site no longer exists and thus the site does not meet the criteria for listing on the National Register of Historic Places.

3. Recommendations:

The Department of State Lands plans to remove or reclaim the coal slack dumps. The mine area has been recorded, mapped and photographed and further work on the site would not reveal additional information. No further work on the site is recommended.

COMMERCIAL MINE



Scale: 1cm = 35m